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ENDANGERED KNOWLEDGE: WHAT WE CAN LEARN FROM NATIVE AMERICAN LANGUAGES

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Altho' their Tribes or Nations border one upon another, yet you may discern as great an Alteration in their Features and Dispositions, as you can in their Speech, which generally proves quite different from each other, though their Nations be not above 10 or 20 Miles in Distance.

[John Lawson, *A New Voyage to Carolina*, 1709, p. 29]

As John Lawson traveled up the Santee, Congaree, and Catawba rivers in South Carolina and across the North Carolina Piedmont, areas that in 1701 were beyond the frontier of European settlement, he found diverse Native American peoples speaking a profusion of tongues. Most of these groups soon coalesced as the Catawba nation, in the towns of which more than twenty languages and major dialects could still be heard in 1743. Ravaged by conflicts and introduced diseases, by 1760 the remnant of these peoples was reduced to a single community. Of all the languages they had once spoken, eventually the only one that survived was Catawba, which was documented by linguistic fieldwork before the last speakers died in the 1950's. Of the others there is almost no trace.

The languages of the Carolinas can be taken as emblematic for the whole continent. The languages native to North America were and are numerous, diverse, and in most cases severely endangered. There may have been as many as 400 distinct languages spoken in North America north of the higher civilizations of Mesoamerica and their satellites in 1500. (This definition of ethnographic North America follows the one used by the Smithsonian's *Handbook of North American Indians*.) Of these 400, it is estimated that about 70 ceased to be spoken before any documentation was made of them, except for a few isolated words and names in a few cases. An additional 125 or more have no speakers left but are known from at least some documentation, which ranges from thorough to pitiful. Only about 45 languages still have a significant number of children learning to speak them natively in family settings, most of these being spoken in Canada, Greenland, and northern Mexico.

Diversity

A measure of diversity of the languages of North America is the number of distinct language families they fall into. (A language family is a set of languages that can be shown to have developed from a common ancestral language.) The 330 or so languages for which there are at least some data belong to over sixty language families, some of which are extremely diverse in their own right. These numbers also include 28 languages with no identifiable relatives, each of which, therefore, constitutes a separate family by itself. For some languages there is simply too little information to work with. From the Aranama language of Texas we have only the single phrase *himiyána tsáyi* 'give me water' (*himiyána* being 'water'). Since these are everyday words that match no other language, Aranama must be assumed, on the available evidence, to represent a separate language family. For other languages no relatives can be found even though we have very full documentation from the last speakers, as in the case of the Tunica language of Louisiana, Tonkawa in Texas, or Haida in British Columbia and Alaska.

Although it seems likely that some of the 60-odd families are related to each other on a deeper time level than is now accessible, such relationships, while often claimed, have not yet been demonstrated to the satisfaction of specialists. It is also uncertain whether it will eventually be possible to demonstrate relationships between languages of the Western Hemisphere and those of Eurasia. The most promising possibilities would link the Eskimo-Aleut languages, spoken across the Alaskan and Canadian Arctic and in the Russian Far East, with their near neighbors west of the Bering Strait.

Bilingualism and Multilingualism

Native Americans appear to have coped with a multilingual environment mostly by learning other languages. It was apparently not uncommon in some areas for some people to know several languages other than their own. There were often war captives or foreign spouses in a community, and in some cases children were sent to live with neighboring tribes in order to learn their languages. The Five Nations of the Iroquois Confederacy spoke five languages, and a representative of any of the tribes would address council meetings in his own tongue. Clearly Iroquois leaders had to be multilingual, at least passively. In the historical period Indian guides and interpreters were used by European explorers and officials.

In some cases one particular language was used generally as a lingua franca by speakers of all the languages in an area, especially if there were political relationships among the groups. Creek was the common language of the polyglot components of the Creek Confederacy in Alabama and Georgia. The language of the politically and numerically dominant Tuscaroras was spoken by at least the leaders among the small tribes in eastern North Carolina. In the Lower Peninsula of Michigan, Ottawa was used also by the Ojibwas and Potawatomis. In fact, Ottawa tended to replace the other languages of the area in groups that continued to speak an Indian language. In the Upper Peninsula and Wisconsin, it was rather Ojibwa that was spoken by many bilingual Potawatomis and Menominees. On the southern Plains, Comanche was widely spoken in all tribes, while on the northern Plains the common languages were Plains Cree and Blackfoot.

In the polyglot area of the Texas Gulf Coast and the lower Rio Grande Valley, a sign language was in use that permitted communication on a wide range of topics. This spread northward, apparently in recent centuries, and became best known as the Plains Indian sign language.

Pidgin Languages

After European contact pidgin languages came into use in several areas. These were greatly simplified versions of Indian languages that emerged from Indians' imitations of the broken attempts by Europeans to speak the local Indian language. On the East Coast, Pidgin versions of Algonquian languages came to be used from southern New England to Virginia. Some Europeans thought they were learning the real Indian language, which they denigrated for its simplicity, but others knew that the Indians would snicker among themselves at the Europeans for speaking the babytalk that the Indians had taught them.

In Louisiana and on the northern Gulf Coast, the French found Mobilian Jargon already in use when the first colonial officials arrived on Mobile Bay in 1699. This was essentially a pidgin form of Choctaw, which was spoken in eastern Mississippi. It is possible that it had grown up among the polyglot tribes of the area, but parallels with other pidgins suggest that it was more likely developed for communication with the traders and backwoodsmen who preceded the French officials into the area by a few years.

From British Columbia to Oregon, European and American sea-farers tried to communicate with Indians up and down the coast using a vocabulary of the Nootka language of Vancouver Island that had been published in the reports of Capt. James Cook's expedition as well as Nootka words from Spanish reports. This very sparse Nootka Trading Jargon was in use on the lower Columbia River when Meriwether Lewis and William Clark arrived there on their overland exploration expedition in 1805. Subsequently the Nootka Jargon was greatly expanded in the Columbia River trading centers by the accretion of words from the local Chinook language and others, including English and French. The result was Chinook Jargon, a full-blown pidgin but unusual for the number of languages it was derived from, which spread back north and over a wide area.

Loanwords

Speakers of English and other European languages often learned words from Indian languages, sometimes through the medium of local pidgins. While many of these words were not widely known and have passed out of use, many are still part of English today. From the Algonquian languages of the East Coast and the upper Great Lakes come a number of words for plant and animal life and for Indian people and culture. Among the earliest borrowings in North America were *wigwam* and *sagamore* 'chief,' which were learned by English-speakers on the coast of Maine before the first permanent settlement in Massachusetts in 1620. Other early New England words were *moose*, *skunk*, *wampum*, *papoose*, and *squaw*, the last from the Massachusett word for 'younger woman' but now considered demeaning. *Squash* was shortened from *askútasquash*.

In Virginia, English added *persimmon*, *possum*, and *raccoon*. *Hickory* was shortened from Virginia Algonquian *pawcohiccora* 'hickory-nut milk,' and *hominy* was shortened from *Usketehamun*. A *powwow* was a shaman or religious healer in New England; the word is derived from the verb 'to dream'. Later this word was applied to a religious ceremony and then to any gathering or meeting of Indians or with Indians.

Chipmunk, earlier pronounced *chitmunk*, is from the Ojibwa word for redsquirrel. *Sasquatch* is from the Halkomelem language of British Columbia. Many fish names are of Native American origin, including *muskellunge*, *sockeye*, and *mummichog*, shortened to *mummies* in Rhode Island bait shops. The same fish is called both *scup* and *porgy*, different shortenings of Narragansett *mishcuppaûûg*.

Placenames are the most pervasive of loanwords and the most challenging. They have often been altered within English and their original form and meaning can be difficult or impossible to establish, particularly in parts of the continent like the East Coast where the local languages and their geographical vocabulary are poorly known. Many conventional explanations of Indian placenames that have become part of local lore cannot be confirmed from linguistic sources. We can be confident that *Connecticut* meant 'great river' in New England languages (where there is testimony of native speakers) and that *Mississippi* meant the same thing in the Ottawa language (since it appears in an early dictionary), but for many names like Michigan and Milwaukee the early sources are in conflict and the origin and meaning are uncertain. The states with names that were originally those of Indian tribes are: Alabama, Arkansas, (North and South) Dakota, Illinois, Iowa, Kansas, Massachusetts, Missouri, and Utah.

Specialized Vocabulary

Within Native American languages the words used in certain subject areas often cast light on the culture. How relatives are designated varies not only in the words used but in the pattern and structure of the whole system of kinship terms. In Meskwaki, you call your first cousins 'brother' and 'sister' if the parents that link you to them are two brothers or two sisters. (Consistently with this, your father's brother and mother's sister call you 'son' or 'daughter'.) But your cousins (in the English system) that are your mother's brother's children you call 'aunt' (mother's sister) and 'uncle' (mother's brother). With your father's sister's children the roles are reversed and you call them what you would call your niece and nephew.

Kinship terminologies like the Meskwaki one are types of Omaha systems, named for the tribe that typified the pattern. They are often found in societies with strong patrilineal clans or the like. In such societies kinship terms for relatives outside the immediate family are often determined by equating people of different generations if they are in the same patrilineal lineage (consisting of a man and his children, and his son's children, and his son's son's children, and so on). So in Meskwaki a mother's brother's son is also called 'uncle', and *his* son is called 'uncle', and so on down; an old man can call a small boy his uncle if the boy is in the patrilineal lineage of his own mother's brother. Conversely, a man calls his father's sister's daughter 'niece' because that's what his father calls her. (But this man's sister calls this same first cousin 'daughter', because that's what any of her father's sisters would call her, by the rule given above that equates same-sex siblings.)

Native American languages often have highly elaborate specialized vocabularies for aspects of culture and the environment that the speakers want to be precise about. For example, Yupik Eskimo walrus hunters on Saint Lawrence Island compiled a list of 99 words that designate different kinds of sea ice. Survival on Arctic waters requires detailed knowledge of conditions.

The terminology for sea ice provides labels for ice formed in a number of different ways and with various characteristics important for both hunters and walrus, such as how dangerous it is to walk on and how well it floats.

Writing

Writing existed in Mesoamerica long before the arrival of the Spaniards, but the languages of North America were not written until after contact with Europeans. In many Native American communities writing systems were developed or acquired, and many Native American writers have written in their own languages, producing valuable cultural and linguistic documents.

In several areas Christian missionaries of various faiths devised writing systems which were then used by native speakers for secular as well as religious purposes. The first Bible to be published anywhere in the Americas was translated into the Massachusett language by John Eliot and his Indian helpers and printed in Harvard Yard in Cambridge, Massachusetts, in 1663. Using this, Massachusett speakers became literate and corresponded and kept personal and official records in their own language. The people of Mashpee on Cape Cod, for example, sent an eloquent petition written in Massachusett to the Massachusetts General Court (the colonial legislature) in 1752. The petition both used the high style of the traditional oratory of the sachems (the ruling aristocracy) and evoked a shared Christian faith to denounce the English who were encroaching on and destroying Indian resources. It ends:

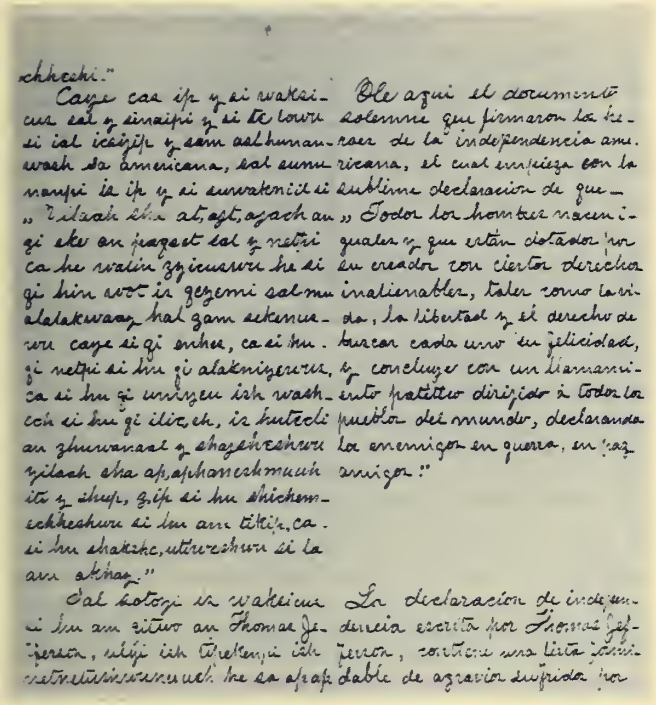
yeuyeu koowehquttummaunummun:
kenootamwanshinnan,
onk woh matta kooche woh nootamhukoonannog ut nuthohkenannut
'Now we beseech you:
defend us,
and they would not trouble us any more on our land.'

In Spanish Florida, caciques (town and district leaders) of the Apalachee and the Timucua wrote letters in their own languages to the king of Spain in 1688. In fact, the Apalachee letter preserves essentially all we know of the language. A Luiseño, named Pablo Tac, while studying for the priesthood in Rome, wrote a grammatical sketch of his language in Spanish before his death in 1841. At about the same time Iakov Netsvetov, a Russian Orthodox priest and native speaker of the Aleut language, was compiling his manuscript dictionary of it, using a special adaptation of the Cyrillic alphabet. Later that century the Cherokee medicine man Swimmer wrote out sacred formulas and medicinal prescriptions in the syllabic characters invented about 1819 by Sequoya (George Gist).

By 1880 the Meskwakis of Iowa were writing their language in an adaptation of the French alphabet devised by an unknown inventor and used also by the Potawatomi, Sauk, and Kickapoo. The Meskwakis wrote everything from tribal records to postcards in the Meskwaki language. Among those who wrote traditional stories for the Smithsonian linguist Truman Michelson in the years after 1911 was Alfred Kiyana (Keahna). Kiyana compiled thousands of pages, including also childhood reminiscences and lists of unusual words, some with definitions, all written in Meskwaki. The Winnebago (Ho-Chunk) Sam Blowsnake wrote his widely read autobiography in his own language using a writing system that had been adapted from Meskwaki to write the different sounds of the Winnebago language.

Juan Esteban Pico devised a writing system for his native Ventureño Chumash that is based on Spanish but with added features that permit the indication of significant Chumash sounds that are not found in Spanish. One of his writings that survives is a Fourth of July speech, bilingual in Ventureño and Spanish. When the Smithsonian fieldworker Henry Henshaw took linguis-

Left, Meskwaki writer Alfred Kiyana (b. 1877, d. 1918), and B.A.E. linguist Truman Michelson. Photo taken about 1912. From HNAI 17:250: figure 3.



A page from a text titled "Cuatro de julio de 1890" written by Juan Esteban Pico, 1891, in Ventureño Chumash. Smithsonian. NAA: ms. 3718:5.

tic notes from Pico in 1884 using the current technical phonetic alphabet, his transcriptions were much less precise than what Pico would have been able to furnish if he had been asked to write out everything himself. The Kiowa Parker McKenzie worked out an alphabet that distinguished all the complex sounds of his language, including contrastive tones, and left an extensive documentation of Kiowa at his death in 1999.

Maintenance and Revival

Today, many Native American communities have language programs to try to teach their languages to children. In many cases this involves teaching them a language that they do not learn at home. In some cases the language is no longer spoken at all and is reconstructed on the basis of linguists' descriptions, recordings, and earlier writings.

The Structure of Words

In the quotation from the Massachusett petition given on page 4, there is a word *koowehquttummaunummun* that means 'we beseech you', the equivalent of an entire three-word English sentence contained in a single word. The prefix *koo-* and the suffix *-unummun* act together to specify the pronouns of the sentence and their relationship: 'we' acting on 'you'. The rest of the word in the middle is the stem ('beseech'), which can take a very large number of other prefix-suffix combinations to indicate not only who is acting on whom but also numerous verbal categories, including, for example, a past tense, modes equivalent to 'if' and 'don't', and the negative 'not'. This sort of complexity gave rise to the hypothesis that Native American languages represented a distinct type of POLYSYNTHETIC language, meaning that words are put together (*synthetic*) out of many parts (*poly-*). Although we now know that not all Native American languages are of this sort, many of the language families of North America do have this characteristic, and documenting and understanding how languages like this work remains a major priority in the field of linguistics.

One of the challenges faced in documenting polysynthetic languages is that, in addition to the fact that words take large numbers of prefixes and suffixes, the word stems themselves may be complex, comprising layer upon layer of derivation and accretion. For example, starting with the Meskwaki stem *aamo-* 'run away, flee' (as in *netaamo* 'I ran away', with *net-* 'I') we can make a word as follows:

aamo- 'flee' + (prefix) *in-* '(so)' (i.e., in the manner specified by another word):
→ *inaamo-* 'flee (so), flee in such and such a way'.
inaamo- 'flee (so)' + *-h* 'cause to':
→ *inaamoh-* 'cause (an animal, for example) to flee (so)'.
inaamoh- 'cause (animal) to flee (so)' + *-taa* 'to or for (someone)':
→ *inaamohtaa-* 'cause (animal) to flee (so) to or for (someone)'.
inaamohtaa- 'cause (animal) to flee (so) to (someone)' + *-tii* 'each other':
→ *inaamohtaatii-* 'cause (animal) to flee (so) to each other'.

Using this five-part verb stem with the word *aayaashoohka* 'back and forth' to specify the manner of the act (for which the prefixed *in-* acts as a sort of place-holder) and adding the pre-verbal element *kiiwi* 'around' and the inflection *eeh-...waachi*, which indicates 'they' in narratives, produces the sentence:

aayaashoohka eeh-kiiwi-inaamohtaatiiwaachi.
'They kept it running back and forth between them.'
(More literally, 'They made it flee around back and forth to each other.')

This sentence appears in a traditional Meskwaki story as a description of the bear hunters that rose into the sky, where they, the bear, and their little dog make up the stars of the Big Dipper.

The traditional Inuit story of Fox and Raven as recounted in an eighth-grade school reader used in Greenland contained the word:

oKausigssaerutitísasorileratdlardlune.

This is built on the noun *oKa-* 'tongue', which makes the verb *oKarpoK* 'use the tongue, speak'. (The *K* of the older orthography, now written *q*, spells a far back *k* like the Arabic sound transcribed as *q*; *r* is pronounced as in French, standard German, or Danish.) This stem is suffixed as follows:

Begin with *oKa-* 'tongue, speak'.
Add *-usi* to make a verbal noun:
→ *oKausi-* 'speaking, speech, words'.
Add *-gssa* (pronounced approximately *-ghsha*) to make this future:
→ *oKausigssa-* 'future speech'.
Add *-eruti* 'have no more':
→ *oKausigssaeruti-* 'have no more future speech'.
Add *-ti* 'make, let':
→ *oKausigssaerutiti-* 'make have no more future speech', i.e., 'deprive of future speech'.
Add *-ssa*, the future suffix again (´ indicates double *ss*):
→ *oKausigssaerutitísa-* 'will deprive of future speech'.
Add *-sori* 'think, suppose':
→ *oKausigssaerutitísasori-*
'to suppose that (one) will deprive (the other) of future speech'.
Add *-ler* 'begin':
→ *oKausigssaerutitísasoriler-*
'begin to suppose (one) will deprive (the other) of future speech'.
Add *-atdlar* 'for the time being':
→ *oKausigssaerutitísasorileratdlar-*
'begin to suppose, for the time being, that (one) will deprive (the other) of future speech'.
Add *-dlune*, suffixes for mood and person:
→ *oKausigssaerutitísasorileratdlardlune*
'beginning to suppose, for the time being, that he would have deprived him of future speech'.

Or more freely (but less nuanced): 'supposing, for the time being, that he had rendered him speechless'.

The Structure of Sentences

A simple English sentence is *The man found the boy.* Here *the man*, which refers to the doer (the one who does the finding), is called the subject, and *the boy*, which refers to the undergoer (the one who is found), is called the object. In English it is the order of words that differentiates this sentence from *The boy found the man.*, in which the roles are reversed. Linguists have found evidence in English and other languages that the object is more closely linked to the verb than the subject is. When the sentence is analyzed into its parts, the verb and its object together form a VERB PHRASE. The object is linked to the verb, but the subject is linked to the whole verb phrase. On this hypothesis it is the different structural relations of the two nouns that determine their different roles. As we build our theory of how language works we need to incorporate the concept of verb phrase, but subject and object are not basic concepts in the same way, since these are predictable once we recognize the existence of verb phrases. By analyzing English sentences this way we are able to explain more with fewer basic concepts, which is the goal of all theory building in science.

Many polysynthetic Native American languages challenge this theory. For example, in Meskwaki one way to say 'The man found the boy.' is:

neniwa mehkaweewa kwiiyeseehani.

Basically *neniwa* is 'man'; *mehkaweewa* is 'he found him'; and *kwiiyeseehani* is 'boy'. But any of the six logically possible arrangements of these three words can be used, and all six mean the same thing:

mehkaweewa kwiiyeseehani neniwa.
mehkaweewa neniwa kwiiyeseehani.
neniwa kwiiyeseehani mehkaweewa.
kwiiyeseehani mehkaweewa neniwa.
kwiiyeseehani neniwa mehkaweewa.

(The six word orders are given in descending order of frequency, as determined from a study of over 150 texts by Lucy Thomason of the Smithsonian's Department of Anthropology.)

None of these sentences can mean 'The boy found the man.' Obviously word order is not being used to distinguish subject and object, but what then does? How do Meskwaki speakers know who is the doer and who the undergoer? The key is in the inflections at the ends of the words. The endings on the nouns assign them to two different categories, which to avoid technical jargon we can call teams. The word *neniwa* 'man' ends in *-a*, which we'll say marks it as a member of the A-team; *kwiiyeseehani* 'boy' ends in *-ani*, which puts it on the B-team. These endings do not specify subject and object; that is the task of the verb ending. In this case the verb stem *mehkaw-* 'find' has an ending *-eewa* that specifies an A acting on a B. (In linguistic terminology the A-team is called proximate, and the B-team is called obviative.)

The rule is that if there is an A-team noun, any other noun must be marked as being on the B-team. (Some details are omitted here.) But the speaker can decide which noun is on which "team." If the man is the hero of the tale or the focus of current interest he will be marked as on the A-team; if the boy is the one in the forefront in the narrative he will be marked as A-team and the man will have to be B-team. In this second case the three words of the sentence have different inflectional endings, and again all six mathematically possible word orders are possible:

neniwani mehkaakwa kwiiyeseeha. (And the five other word orders.)

This still means 'The man found the boy.': *neniwani* is 'man (B)'; *kwiiyeseeha* is 'boy (A)'; and here the verb is *mehkaakwa* 'B found A', with a different ending to indicate 'B acting on A'. This way of saying it, however, implies that the boy is the center of the discourse, at least for the time being. Thus the sentence has something of the flavor of an English passive sentence: 'The boy was found by the man.'

In telling a story the speaker has the latitude to assign characters to the A and B teams in different ways. A battle between the Meskwaki and the Sioux may be described with the Meskwakis always in the A category and the Sioux always B. The nouns can then be largely dispensed with, since the antagonists are distinguished unambiguously by the verbal endings. Or in another style the two sides may alternate taking A-team status. This has a sort of cinematic effect, as if the camera was shifting back and forth to follow the action. The subtle and complex use of these categories gives Meskwaki narratives a nuanced texture that is all but impossible to translate into English.

Linguists say that languages like Meskwaki have a "flat structure," meaning that there is no evidence for an abstract verb phrase (verb + object) functioning as a unit in the organization of sentences. There are other consequences of this fact. In English *The man found his son.* can mean that the man found his own son, but *His son was found by the man.* cannot have this meaning. In this case it would have to be someone else's son. In Meskwaki, however, there is no such contrast between word orders:

neniwa mehkaweewa okwisani. 'The man found his (own) son.'

okwisani mehkaweewa neniwa. 'The man found his (own) son.'

Here *okwisani* 'his son' is marked by its ending *-ani* as belonging to the B-team. With the verb ending for B acting on A, this can designate the doer:

neniwa mehkaakwa okwisani.
'The man was found by his (own) son.'
okwisani mehkaakwa neniwa.
'The man's (own) son found him.'

Regardless of whether *okwisani* 'his son' precedes or follows *neniwa* 'man' it refers to the man's son. (If it was someone else's son a more complex verb would be used.)

Principles of Organization

Some linguists cling to the belief that a structure somewhat like that postulated for English can be made to work for languages like Meskwaki on an abstract level. Other linguists argue that the absence of any evidence that would support such abstract entities as verb phrases indicates that principles of organization are operating in Meskwaki that are fundamentally different from those postulated for English. This has serious consequences for the attempt to understand the principles that operate in human language generally, since linguistic theoreticians assume that all languages share the same abstract organizational principles on some level. If there are some languages that can be demonstrated not to have a functioning verb phrase, then an abstract verb phrase is not a universal feature of all languages. If that is so, then syntactic roles like subject and object must be specified as primitive concepts in the universal abstract structure of all languages after all.

The most fundamental questions of how human language in general is organized are thus at stake in the debate over the correct analysis of Meskwaki and similar languages. And answering basic questions about how language works is likely to have consequences for our ability to understand the mechanisms of human thought, including the evolution of the brain, childhood development, learning, and cognitive function and disability. But just at the point when we are in a position to ask meaningful questions about the structure of language, the data that might lead to answers are disappearing at a precipitous rate with the loss of linguistic diversity around the world. The languages most likely to have structural patterns that challenge the theory developed on the basis of familiar languages and are among those most at risk. When these languages are gone, linguists will not be able to ask speakers for their insights into possible meanings or their acceptance of possible sentences they might want to test. Even where languages survive, they are changing rapidly in the modern world as bilingualism in dominant languages increases everywhere.

The loss of Native American languages is a cultural tragedy of almost unimaginable dimensions, but it also puts at grave risk our ability to ever understand fundamental aspects of how we as humans are organized and function. In a very real sense, we will not be able to understand how English works until we understand how Meskwaki, and Mohawk, and Navajo work, and the time for doing that is running out.

Further Reading

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Video: Ives Goddard presents his translation of "The Married Couple: the Man Whose Wife Was Wooed By a Bear," by Aldred Kiyana (Meskwaki). http://www.nmnh.si.edu/departments/anthro.html/

Ives Goddard is senior linguist in the Smithsonian's Department of Anthropology.

Ives Goddard with Adelilne Wanatee (1910-1996), Meskwaki Settlement, Tama, Iowa.